

LAFCO of Napa County

Local Agency Formation Commission

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AGENDA ITEM NO. 8c

August 14, 2003

TO: Local Agency Formation Commission

FROM: Keene Simonds, Analyst

SUBJECT: Comprehensive Water Service Study: *Draft Determinations*

At its April 10, 2003 meeting, the Commission received a presentation by staff providing an overview of the first phase of the *Comprehensive Water Service Study*. Following this presentation, the study was released for public review and a public workshop was conducted by the Commission at its June 12, 2003 meeting. At the conclusion of the public workshop, the Commission directed staff to proceed with the next phase of the study: the development of draft determinations.

Accordingly, staff has prepared draft determinations with respect to the Cities of American Canyon and Calistoga, Town of Yountville, and the Napa Sanitation District. These draft determinations are included with updated study sections for each affected agency and are presented to the Commission for its consideration pursuant to Government Code §56430. Staff is presenting these draft determinations to the Commission for a first-reading. These draft determinations will then be circulated for comment from affected agencies and interested parties. Final determinations will be presented for adoption at the Commission's October 9, 2003 meeting.

Draft determinations for the remaining agencies included in the *Comprehensive Water Service Study* will be presented to the Commission at its October and December meetings.

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CITY OF CALISTOGA

OVERVIEW

The City of Calistoga was incorporated in 1886 following the development of the Calistoga Hot Springs Resort, a luxury hotel and resort founded by Samuel Brannan. The Calistoga Hot Springs was intended to rival the celebrated Saratoga Resort in New York and to provide Calistoga with a viable commerce foundation based on tourism. The subsequent development of the Napa Valley Railroad, which transported residents and visitors from Napa City to Calistoga, aided in the development of the City, and by the early 1900s there was a need for a potable water system.

The development of Calistoga's first potable water system emerged in the first half of the 20th Century, and consisted of water drawn from Stone Pond in nearby Feige Canyon. The City's water system was later amended following the construction of Kimball Dam in 1939. The construction of Kimball Dam allowed the City to begin diverting and storing water from Kimball Creek, a tributary of the Napa River. The construction of Kimball Dam facilitated the creation of Kimball Reservoir, which served as Calistoga's primary water source until growth demands in the 1960s prompted the City to develop a well site in Feige Canyon. Developed between 1965 and 1973, the Feige Canyon well site involved the construction of four wells. Two of these wells were later abandoned due to limited production and high levels of iron. Over the next several years, the two remaining Feige Canyon wells produced an annual average of 100 acre-feet of water. The wells proved particularly valuable to the City during the 1976-1977 drought when water supplies at Kimball Reservoir were diminished. In the 1990s, however, production of the Feige Canyon wells began to taper. The wells were also producing groundwater that had instances of high levels of arsenic, antimony, and mercury. The wells were eventually taken off-line in 1998 following the detection of antimony that exceeded regulatory standards imposed by the California Department of Health Services (DHS).

Before their deterioration, the Feige Canyon wells provided Calistoga with a reliable source of water to supplement production at Kimball Reservoir. However, even with the Feige Canyon wells in operation, water demands in the City were outpacing supply. In the late 1970s, Calistoga's limited water supplies forced the City to issue a moratorium on building permits. In 1982, to alleviate system demands on Kimball Reservoir and the Feige Canyon wells, the City reached a water supply agreement with the Napa County Flood Control and Water Conservation District (NCFCWCD). The original agreement provided the City with an annual entitlement of water drawn from the State Water Project (SWP) through 2035, and established a maximum annual entitlement of 500 acre-feet by 1990. The agreement was amended later that year as part of a statewide program by the Department of Water Resources to encourage SWP contractors to implement water conservation programs. The amendment increased the City's short-term entitlement while regressing Calistoga's maximum annual entitlement to 2003 (subsequently accelerated to 1999). The amended agreement requires the City to have a water

conservation plan with the specific goal of conserving 130 acre-feet of its annual SWP entitlement by 2010.

In 1982, to gain access to its SWP entitlement, Calistoga entered into an agreement with the City of Napa. Pursuant to this agreement, Napa treats and conveys Calistoga's SWP entitlement through an interconnection between the two cities' distribution systems. In exchange, Napa is reimbursed for the capital costs associated with the construction, operation, and maintenance of the Jameson Canyon Water Treatment Plant on a proportionate level to the amount of Calistoga's maximum annual entitlement. Napa is also reimbursed for the delivery costs associated with the construction, operation, and maintenance of its distribution systems (Conn and Jameson Lines) that convey water to Calistoga. Since Napa's water sources are commingled, Calistoga's SWP entitlement is essentially turned over to Napa in exchange for an equal amount of potable water from one of Napa's three potable sources: SWP, Lake Hennessey, and Milliken Reservoir. Calistoga's distribution system is connected to Napa's distribution through its "NBA Line." Built in 1984, the NBA Line is approximately 12.3 miles long and connects to Napa's distribution system near the intersection of Silverado Trail and State Highway 128.

Although the addition of SWP water in 1982 provided Calistoga with a much-needed reprieve from increasing system demands, relief proved temporary. In the late 1980s, Calistoga's water supply attracted the attention of DHS, which regulates all public water systems in California. DHS expressed concern regarding the City's capability in meeting system demands with existing water supplies. Requests by DHS in 1992 and 1995 for Calistoga to submit a plan and timetable for the development of additional water supplies went unanswered, resulting in DHS issuing a compliance order to the City in 1996. The compliance order required Calistoga to submit a detailed evaluation of its water system. In particular, Calistoga was required to submit a plan and timetable addressing its ability to meet existing maximum demand conditions as well as demands through 2007. As a result of the compliance order, Calistoga authorized two independent evaluations of its water system. An evaluation of Calistoga's available water supply concluded that it was sufficient to meet demand under normal conditions through 2007, but was not capable of meeting current and projected demands in either below normal or dry year conditions. To address current and future system demands, Calistoga evaluated a number of options to increase its available water supply. In the end, Calistoga planned to accelerate its full SWP entitlement, purchase 500 acre-feet of additional SWP entitlement from the City of Vallejo, dredge Kimball Reservoir, and purchase water from the State Water Bank during dry years. Calistoga concluded that upon completion of these projects, its water supply would be capable of meeting current and projected system demands through 2033. These planned actions were codified by a subsequent compliance order by DHS in 1997, requiring Calistoga to complete the first three projects along with relocating and upgrading the Pope Street Pump Station within specified time periods.

Improvements to increase its water supply were initiated in 1998 following Calistoga's successful negotiation to accelerate its SWP entitlement to its maximum amount of 500 acre-feet. That same year, Calistoga also increased its water supply following an agreement with the City of American Canyon. This agreement involved a three-way exchange between Calistoga, American Canyon, and Vallejo. American Canyon agreed to permanently transfer 500 acre-feet of annual SWP entitlement to Calistoga, with 25 acre-feet being made available beginning in 2000 and in each year thereafter until the total is reached in 2019. In exchange, Calistoga agreed to assume all responsibilities of entitlement and compensate American Canyon \$500,000. Calistoga also agreed to reimburse Vallejo \$114,000 for the construction of facilities connecting American Canyon's distribution system to Vallejo's distribution system. This interconnection provides American Canyon the ability to purchase replacement water from Vallejo under the terms and conditions of an earlier agreement made between those agencies.¹

Calistoga's water supply was increased again in 2000 following a water transfer agreement between NCFCWCD and the Kern County Water Agency (KCWA). The agreement was negotiated by NCFCWCD on behalf of the five cities in Napa County and established the terms and conditions for NCFCWCD to permanently purchase 4,025 acre-feet of annual SWP entitlement from KCWA. Costs are proportionately shared by each city according to the amount allocated. Calistoga's share of this entitlement transfer is 925 acre-feet and is relied upon to meet system demands during cutbacks in SWP deliveries.

Also in 2000, Calistoga issued its first comprehensive water facilities plan. The plan included a detailed review of the City's existing water system and recommended several capital improvement projects to address current and future system deficiencies. Most notably, the plan recommended that Calistoga increase its local water supply by dredging Kimball Reservoir in order to recover storage capacity lost to sedimentation. The facilities plan also recommended that Calistoga expand its treated water storage capacity by constructing a new storage tank to ensure adequate reserves. In all, the facilities plan recommended 16 capital improvement projects at an estimated cost of \$13.1 million (anticipated costs were subsequently reduced to \$9.8 million).

In 2001, Calistoga hired an outside consultant to conduct a water rate study. The study concluded that the City needed to substantially increase its water rates to meet operational and capital improvement costs. This conclusion was based primarily on four factors: the last rate increase occurred in December 1994; rate increases adopted in 1994 for implementation in 1995 and 1996 were never imposed; the cost to cover improvements to the water system; and the cost to cover the purchase of additional water supplies. To this end, the study recommended that the City increase its overall water rates over the next five years by 6%, 8%, 10%, 10%, and 10%. The recommended rate change was adopted by Calistoga's City Council in April 2002 and included adjustments

¹ In 2000, following a request by Calistoga, DHS has amended its compliance order allowing the City additional time to complete the last two projects. As a result, Calistoga was required to complete the relocation and upgrade to the Pope Street Pumping Station by June 1, 2002 (subsequently amended). Additionally, Calistoga is required to complete its dredging of Kimball Reservoir by January 1, 2005.

to the water rate structure that were intended to improve rate equity between customers. The adopted rate change implemented a six-tiered volume rate schedule for single-family residences. The six-tiered rate schedule raised volume rates for single-family residential customers and was designed to encourage water conservation. The adopted rate change also substantially increased the base fee for water connections from \$6,812 to \$26,350 (based on one acre-foot use). However, in response to the objections of residential customers, the City Council subsequently amended these rate changes and elected to provide credits toward residential water bills from the General Fund. The amended rate schedule lowered the single-family residential tier rates and increased volume rate reductions for low and very low-income residents.

In 2002, Calistoga commenced its capital improvement program with a major pipeline replacement for the Feige Canyon Storage Tank. Other planned projects include constructing a new 1.5 million gallon storage tank, numerous water main replacements, dredging Kimball Reservoir, and constructing an inflatable dam at Kimball Dam to increase storage capacity. Calistoga has obtained approval of a grant and loan funding package from the United States Department of Agriculture (USDA) to finance the first group of these capital improvement projects. The City is currently pursuing financing options with USDA to assist in the costs for the new water tank project.

In addition to providing potable water service, Calistoga operates a reclaimed water program. The intent of Calistoga's reclamation program is to reduce overall discharge of treated wastewater to the Napa River and to lessen storage requirements when discharge is prohibited by the San Francisco Bay Regional Water Quality Control Board; discharge is currently prohibited between May and October. Calistoga's reclamation services consist of tertiary treated wastewater that provides for unrestricted use with the exception of human and/or animal consumption. Due to high levels of boron in the treated water (a result of processed groundwater), however, Calistoga's reclamation projects are limited to pasture irrigation and turf landscaping. As of 2000, the City provided reclaimed water service to approximately 14 sites, consisting of 131 acres. Recipients of the City's reclaimed water are not charged fees for service, but are required to install a meter on the reclaimed water line and a backflow prevention device on the potable water line before connection.

Aside from its water service operations, Calistoga is the only municipality in Napa County with an ordinance regulating the issuance of cold-water wells within its incorporated territory. The ordinance was adopted by Calistoga's City Council in 1998 and is intended to protect and preserve groundwater basins underlying the City. The ordinance prohibits new wells for commercial or industrial use. As part of the permit process, an applicant is required to submit a preliminary report to the City's Public Works Department that includes an estimate of projected water use and current and future land use plans for the affected territory.²

² Agriculture and landscape uses are exempt. Since 1998, Calistoga has received 17 cold-water applications, 9 of which have been approved.

GOVERNANCE

Calistoga was incorporated as a general-law city in 1886 and is governed by a four-member city council and a directly elected mayor. Elections are conducted by general vote; the mayor serves a two-year term while the four city councilmembers serve staggered four-year terms. A city manager is appointed to oversee and implement policies on behalf of Calistoga's governing body and to provide oversight of the City's five departments: fire services, police services, public works, planning and building services, and administrative services. In 1990, the City Council adopted a general plan that outlines land use and development policies for the City through 2010. The City is currently in the process of updating the 1990 General Plan. Calistoga's City Council meetings are conducted on the first and third Tuesday of each month at the City's Community Center. Meetings are open to the public.

OPERATIONS

Calistoga's water system is maintained and operated by the City's Public Works Department, Water System Operations. A public works director is appointed by the city manager to oversee and manage the City's water system operations unit. Designated staff is on call 24 hours, 7 days a week to respond to any reported emergencies. The water system operations unit is comprised of three divisions: administration, treatment, and maintenance. As of January 2003, the water system operations unit consisted of 11 employees.

ADOPTED BOUNDARIES

Calistoga's incorporated boundary is comprised of one contiguous area consisting of 1,670 acres. Calistoga's adopted sphere of influence is conterminous with the City's incorporated boundary. The City's water service area extends outside its incorporated boundary to include several properties north of the City along Highway 29 and west along Highway 128. Land use designations for Calistoga are defined in the City's General Plan.

Calistoga – Adopted Boundaries	
Incorporated Boundary:	1,670 acres *
Sphere of Influence Boundary:	1,670 acres *

- * Figures are approximations calculated using information generated by LAFCO and the County of Napa's geographic information systems.

WATER SUPPLY

Calistoga's water supply is drawn from two sources: Kimball Reservoir and the SWP. Water provided by Kimball Reservoir is supplied by Kimball Creek, a tributary of the Napa River. Calistoga's water rights to Kimball Reservoir are secured through two licenses from the State Water Resources Control Board, Division of Water Rights. These two licenses authorize the City to divert and store up to 626 acre-feet of water annually from Kimball Creek for beneficial use. Kimball Reservoir was formed following the construction of the Kimball Canyon Dam in 1939. The dam was subsequently raised in 1948 and has a storage capacity of 409 acre-feet. The storage capacity of Kimball Reservoir, however, has been reduced to an estimated 291 acre-feet due to the gradual build up of sediment.³ In addition, due to its size, Kimball Reservoir's estimated storage capacity is less than its actual output. Calistoga's *Water Facilities Plan (2000)* estimated that Kimball Reservoir produced yields during normal and below-normal years of 392 and 336 acre-feet respectively.⁴ Kimball Reservoir is located northeast of Calistoga and is used as the lead water source until storage levels within the reservoir fall below 30 million gallons.

The portion of Calistoga's water supply drawn from the SWP is secured through a 1982 agreement with NCFCWCD. The original agreement provided the City with an annual entitlement of SWP water through 2035, with a maximum annual entitlement of 500 acre-feet by 1990. The agreement was amended later that year as part of a statewide program by the Department of Water Resources to encourage SWP contractors to implement water conservation programs. The amendment increased Calistoga's short-term entitlement while regressing its maximum annual entitlement to 2003.⁵ The amended agreement requires the City to have a water conservation plan with the specific goal of conserving 130 acre-feet of its annual SWP entitlement by 2010.

In 1998, Calistoga's SWP entitlement was increased following a water transfer agreement with American Canyon. The agreement provides Calistoga with an additional 500 acre-feet of annual SWP entitlement made available in 25 acre-feet increments beginning in 2000 through 2019. The City's SWP entitlement was amended once again in 2000 following a water transfer agreement between NCFCWCD and Kern County Water Agency (KCWA). Negotiated on behalf of the five cities in Napa County, the agreement specified terms and conditions for NCFCWCD to permanently purchase 4,025 acre-feet of annual SWP entitlement from KCWA. Calistoga's share of the Kern County water transfer is 925 acre-feet. As a result, the City's cumulative maximum annual entitlement of SWP water is 1,925 acre-feet by 2019.

³ A 1991 capacity survey estimated that between 1954-1991, Kimball Reservoir experienced a storage loss of 2.6 acre-feet per year due to sedimentation.

⁴ Calistoga defines below-normal as its "firm yield," which is the amount that can be expected to occur 90 percent of the time.

⁵ The receipt of this entitlement was later accelerated to allow Calistoga to receive its full 500 acre-feet by 1999.

An important component in defining the source of Calistoga's water supply derives from its 1982 agreement with the City of Napa to treat and convey its SWP entitlement. The agreement specified that Calistoga would reimburse Napa for the costs associated with the treatment and conveyance of SWP water in proportion to the amount of water delivered. Since Napa's distribution system is comprised of three commingled water sources, Calistoga SWP entitlement is essentially turned over to Napa in exchange for an equivalent amount of water from one of Napa's three sources: SWP, Lake Hennessey, and Milliken Reservoir. Significantly, the conveyance system used to transport potable water from the City's interconnection with Napa (NBA Line) is limited to 0.9 million gallons per day: limiting deliveries to no more than 1,008 acre-feet per year.⁶

Calistoga – Available Water Supply (acre-feet)		
Year	Kimball Reservoir *	State Water Project **
2003	392	1,525
2004	392	1,550
2005	392	1,575
2006	392	1,600
2007	392	1,625
2008	392	1,650

* Availability based on normal year yield conditions as of 2000. Also as of 2000, actual storage capacity for Kimball Reservoir is estimated at 291 acre-feet. Calistoga is required by DHS to dredge Kimball Reservoir by January 1, 2005. It is anticipated that this project will restore approximately 118 acre-feet of the reservoir's original storage capacity (409 acre-feet).

** Calistoga's SWP entitlements are scheduled to increase by 25 acre-feet per year through 2019 at which time the City shall reach its maximum entitlement of 1,925 acre-feet. Entitlements continue thereafter until 2035.

WATER DEMAND

In 2001-2002, Calistoga delivered approximately 275 million gallons (843.65 acre-feet) of potable water, resulting in an approximate daily average of 753,425 gallons. The City's maximum day water demand was 1.34 million gallons. Calistoga currently provides water service to approximately 1,440 connections. Of this amount, 72 connections are located outside of the City.

Calistoga – 2001-2002 Water Demand	
Annual Water Demand:	275 million gallons
Average Daily Water Demand:	753,425 gallons
Maximum Day Water Demand:	1.34 million gallons *

⁶ This limitation is caused by the current configuration of the pump stations needed to pressurize the transmission line.

Water Connections:	1,440
Population Served:	4,752 **

* Title 22 of the California Code of Regulations requires that sufficient water be available from the water sources and distribution reservoirs to adequately and dependably meet the requirements of all users under maximum demand conditions (§64562).

** Calculated in accordance with Title 22 of the California Code of Regulations, Government Code §64412.2.

Projected water demands for Calistoga were identified in the City's *Water Facilities Plan (2000)*. The plan projected water demands for Calistoga through 2036 using a per capita method based on the maximum average water demand between 1991 to 1998 and adjusted using an annual growth rate of 1.5%. Demands were calculated under three hydrological conditions: normal year, below-normal year, and dry year.

Calistoga – Projected Water Demands (acre-feet)			
Year	Normal Year	Below-Normal Year*	Dry Year**
2003	1,033	930	782
2004	1,042	938	788
2005	1,053	948	796
2006	1,065	958	805
2007	1,076	969	813
2008	1,088	980	822

* Based on a 10% reduction in demand through a voluntary conservation program.

** Based on a 20% reduction in demand through a mandatory conservation program.

WATER TREATMENT FACILITIES

Calistoga provides treatment of raw water generated from Kimball Reservoir at the Kimball Water Treatment Plant (WTP). Constructed in 1990, the Kimball WTP receives raw water from Kimball Reservoir through an inlet valve. The treatment process begins as raw water passes through an inline mixer that injects chlorine (disinfectant) and polymer (coagulant). Raw water is detained in a settling tank to facilitate the sedimentation of solids in the water. Solids are removed from the treatment process through a separate booster pump. Water is cycled through two adjoining filter banks completing the filtration of unwanted particles from the water. Following the filtration process, water is conveyed into a 100,000 gallon clearwell tank. The clearwell tank completes the disinfection process by allowing the water to complete its necessary contact time with the chlorine. Finished water remains in the clearwell tank until storage levels within the Feige Canyon Storage Tank require recharge. The Kimball WTP has a

treatment capacity of 833 gallons per minute, resulting in a daily treatment capacity of 1.2 million gallons.⁷

Kimball Water Treatment Plant	
Water Source:	Kimball Reservoir
Treatment Capacity:	833 gallons per minute; or 1.2 million gallons per day
Clearwell Storage Capacity:	100,000 gallons

DISTRIBUTION SYSTEM AND STORAGE FACILITIES

Calistoga's water distribution system receives and distributes treated water generated from Kimball WTP and the City of Napa. The City's distribution system consists of a network of two, four, six, eight, ten, and twelve inch water lines that serve the majority of Calistoga as well as 72 outside service connections. Calistoga's distribution system overlays two pressure zones: Zone 1 and Zone 2. Zone 1 serves as Calistoga's primary pressure zone with 1,424 service connections and is served (recharge and system pressure) by the 1.0 million gallon Feige Canyon Tank. Zone 2 includes 16 residential service connections within the High Street area and is served by the 24,000 gallon High Street Tank.

Calistoga's distribution system responds to water levels at the Feige Canyon Storage Tank. When water levels within Feige Canyon Storage Tank fall below a designated level, pumps are activated at either Kimball WTP (Kimball Reservoir) or Dunaweal Pumping Plant (Napa) to provide recharge to the distribution system. Water generated from Kimball WTP is delivered to the City's distribution system by a transmission line that connects to the Feige Canyon Storage Tank. Water generated from the City of Napa is delivered to Calistoga through an interconnection near the crossing of Silverado Trail and Highway 128. Calistoga's connection to Napa's distribution system was completed in 1984 and is comprised of a 12.3 mile transmission line that underlays easements along the Silverado Trail and Deer Park Road as well as a right-of-way belonging to Southern Pacific Railroad Company. The transmission line includes two pump stations that help maintain adequate pressure within the system. The initial pump station, the Pope Street Pump Station, is located near the crossing of Silverado Trail and Pope Street Bridge. This station is typically used between October and April when Napa's Jameson WTP is operating in place of the closer Hennessey WTP. The second pump station, the Dunaweal Pump Station, is located next to Calistoga's wastewater treatment plant and continually operates when the City receives water from Napa.

⁷ Water production is reduced by approximately 50% during the winter months when the City is restricted from diverting no more than 0.48 million gallons per day by the State Water Resources Control Board.

Calistoga – Distribution Storage Capacity	
Feige Canyon Storage Tank:	1.0 million gallons
High Street Storage Tank:	24,000 gallons
TOTAL	1.024 million gallons *

* Total does not include storage capacity at Kimball WTP's clearwell tank (100,000 gallons).

RATE SCHEDULE

Calistoga's water customers are charged two bimonthly fees for water service: a service and a usage charge.⁸ The service charge is comprised of a base demand charge determined by meter size that is multiplied by a demand factor for each type of customer class. Calistoga's customer class is divided into seven categories: single-family residential; multi-family residential; mobile home park; commercial-general; commercial-restaurant; commercial-transient; and industrial.

The usage charge is divided between single-family residences and non-single family residences. Single-family residences are charged based on the amount of water delivered. This charge is determined using a six-tiered rate schedule and measured in units of a hundred cubic feet. Non single-family residences are charged a flat usage fee that is measured in units of a hundred cubic feet. These customers are responsible for a peaking charge if they exceed a designated peak service unit demand that is based on meter size. Customers exceeding their designated peak service unit demand are billed a peak base volume charge and a variable service charge. This service charge represents the City's cost for purchasing water from the City of Napa to meet peak demands. In addition, customers outside the City are subject to an additional 15% charge on water usage fees.

Customers are also charged a \$26,350 water connection fee for new service or for the expanded use of an existing connection. The connection fee is based on an acre-foot of water consumption per year and is adjusted according to projected water use for each customer type.

Calistoga – Bimonthly Service Charge *	Rate
Monthly Service Fee **	
5/8 or 3/4-inch:	\$13.18
1-inch meter size:	\$32.95
1.5-inch meter size:	\$65.90
2-inch meter size:	\$105.44
3-inch meter size:	\$197.70
4-inch meter size:	\$329.50
6-inch meter size:	\$659.00
Demand Factor **	

⁸ Commercial customers are billed monthly.

Single-family residential:	1.00
Multi-family residential:	1.58
Mobile home park:	2.36
Commercial-general:	1.16
Commercial-restaurant:	2.39
Commercial-transient:	2.57
Commercial-industrial:	5.35

* Represent rates as of January 1, 2003. Rates are scheduled to increase over the next three years by 8%, 10%, and 10%.

** The monthly service charge is calculated by multiplying the meter rate with the corresponding demand factor.

Calistoga – Bimonthly Water Usage Charge *	Rate
Single-Family Residence Water Usage Fee	
0-8 hcf:	\$2.52
9-14 hcf:	\$3.02
15-22 hcf:	\$3.36
23-30 hcf:	\$3.36
31-50 hcf:	\$3.36
51 or more hcf:	\$4.46
Non Single-Family Residence Water Usage Fee	
Base Rate:	\$3.36 (per hcf)
Peak Charge - Non-Single Family Residences **	
5/8 or 3/4-inch meter size:	35 hcf
1-inch meter size:	88 hcf
1.5-inch meter size:	175 hcf
2-inch meter size:	280 hcf
3-inch meter size:	525 hcf
4-inch meter size:	875 hcf
6-inch meter size:	1,750 hcf
Peak Base Volume Charge	\$4.41 (per hcf)

* Represent rates as of January 1, 2003. Rates are scheduled to increase over the next three years by 8%, 10%, and 10% .

** Peak charges are applied to non-single-family residences and are calculated by adding the peak base volume charge with a service charge for importing water from Napa.

Note: a hundred cubic feet is equivalent to 748 gallons.

FINANCIAL

Calistoga's Water Operation and Capital Improvements Fund has an approved operating budget for 2002-2003 of \$8,777,900. Primary expenses include financing capital improvement projects, maintenance and operation costs, and repayment of existing debts. The City's anticipated revenue for 2002-2003 is \$9,341,998. Revenue sources include water service charges, connection fees, and state and federal grants. The City's 2002-2003 budgets projects an ending working capital budget of \$1,323,921.

WRITTEN DETERMINATIONS

In anticipation of reviewing and updating Calistoga's sphere of influence, and based on the above-mentioned information, the written determinations enumerated below are intended to fulfill the requirements of Government Code §56430. When warranted, some determinations include supplemental information listed in italics to provide context to the underlying service factor. A review of Calistoga's sphere of influence will be included as part of a future study.

Infrastructure Needs or Deficiencies:

1. Through its local and imported water supply, the City of Calistoga has an adequate supply of water to meet existing and projected water demands under normal conditions within the timeframe of this study.
2. The City of Calistoga should continue to pursue opportunities to increase its available water supply and continue to expand its water conservation efforts. These actions will help to ensure an adequate water supply during periods of below normal and dry year conditions.
3. As a subcontractor of Napa County Flood Control and Water Conservation District, the City of Calistoga receives an annual entitlement of water drawn from the State Water Project. To account for the realities of water entitlements, Calistoga should continue to objectively differentiate between entitlements and actual deliveries in their water supply analysis. This is especially important to ensure an adequate supply of water during extended drought periods when deliveries are restricted.
4. In 2003, the Department of Water Resources issued the *State Water Project Delivery Reliability Report*. The report provides an assessment of SWP deliveries using historical precipitation rates along with projected land and water use demands through 2021, including delivery estimates during drought periods. This report is a valuable tool for SWP contractors and should be incorporated into Calistoga's water supply planning efforts.

5. The City of Calistoga has made reasonable efforts to secure additional water supplies to meet existing and projected water demands within its service area. This demonstrates a continued effort by Calistoga to address system needs and deficiencies in a timely manner.

Recent examples include Calistoga's 1998 water supply agreement with the City of American Canyon and its participation in Napa County Flood Control and Water Conservation District's 2000 water transfer agreement with the Kern County Water Agency.

6. The City of Calistoga requires improvements to its water treatment plant to independently meet maximum day water demands within its service area. In absence of expanding its treatment plant capacity, Calistoga will continue to rely on imported potable water deliveries to help meet maximum day water demands.

Calistoga's maximum day water demand in 2002 was 1.34 million gallons, while its treatment plant's daily capacity is 1.2 million gallons. Pursuant to its adopted operating policies, Calistoga does not intend to upgrade its water treatment plant to independently meet maximum day water demands, and will continue to rely on imported potable supplies during peak demand periods.

7. The City of Calistoga requires improvements to its treated water storage facilities to independently meet maximum day water demands and ensure adequate reserves during an emergency or interruption in service.

Calistoga's maximum day water demand in 2002 was 1.34 million gallons, while its total treated water storage capacity is 1.124 million gallons. In 2005, Calistoga is scheduled to begin construction on a new 1.5 million gallon underground treated water storage tank on Mount Washington, a hill located in the northwest section of the City. Once completed, this project will provide greater balance to Calistoga's distribution system and enable the City to independently meet its projected required storage capacity of 2.451 million gallons in 2010.

8. The City of Calistoga requires improvements to its transmission system connecting its distribution system to the City of Napa to utilize its full amount of contracted entitlements drawn from the State Water Project.

Due to the current capacity and configuration of the pumps needed to pressurize its NBA transmission line, Calistoga cannot take delivery exceeding 0.9 million gallons per day, resulting in an annual restriction of 1,008 acre-feet. Calistoga is currently working with the City of Napa to make improvements to Napa's Dwyer Road Pump Station. Once completed, these improvements will increase delivery to Calistoga and eliminate the need for the City to maintain its Pope Street Pump Station. Construction is scheduled to begin in 2005.

9. The City of Calistoga operates the Dunaweal Wastewater Treatment Plant, which provides tertiary-level treatment to wastewater for reclamation uses. Due to high levels of boron residing in the treated wastewater (impact of processing groundwater), Calistoga's reclamation program is restricted to pasture irrigation and turf landscaping. Consequently, Calistoga's ability to alleviate future demands on its potable water supply through reclamation appears limited.
10. The City of Calistoga is currently under a compliance order by the Department of Health Services to complete specified improvements to its water system as part of its domestic water supply permit. These improvements include commencing a maintenance dredging program at Kimball Reservoir by 2004, and working with the City of Napa to refurbish the Dwyer Street Pump Station by 2005. Future studies should evaluate Calistoga's progress with respect to implementing these needed improvements.

Growth and Population Projections:

1. The City of Calistoga evaluates its water service capacities using reasonable demand projections detailed in its *Water Facilities Plan (2000)*.
2. The calculation formula codified in Title 22 of the California Code of Regulations, Government Code §64412.2, is an appropriate method in estimating the total population served by the City of Calistoga's water service system. The population served by Calistoga's water system based on this calculation method is 4,752.

Financing Constraints and Opportunities:

1. The City of Calistoga has been successful in supplementing its capital reserves with outside financing to cover the costs of implementing needed capital improvements.

Calistoga was recently awarded a 1.0 million dollar grant and 2.5 million dollar loan from the United States Department of Agricultural. This funding is for planned improvements to Calistoga's water facilities, including increasing treatment capacity at Kimball WTP, replacing an inflatable dam at Kimball Reservoir, and relocating Kimball's main transmission line.

Cost Avoidance Opportunities:

1. The City of Calistoga is a member of Napa County Flood Control and Water Conservation District's technical advisory committee, known as "Wartac." This group provides NCFCWCD with a consensus among the five cities and County as it relates to current and future water issues affecting Napa County. This advisory group provides Calistoga the opportunity to share costs with other participating

agencies on projects of mutual interest and facilitates the exchange of service information.

2. The City of Calistoga is a funding participant in Napa County Flood Control and Water Conservation District's "2050 Study." This study's objective is to identify current and projected water demands within each participating agency's service area as well as document agricultural demands in unincorporated areas served by groundwater. This study will also examine the feasibility of pursuing cooperative water supply projects aimed at meeting countywide demands through 2050. Calistoga will benefit from the study and should continually explore collaborative opportunities aimed at identifying new and improved water supplies.

Opportunities for Rate Restructuring:

1. In 2002, the City of Calistoga's City Council adopted its first water rate increase since 1994. The rate increase is spread out over a five-year time period and is intended to meet increased operational costs and to pay for needed capital improvement projects; surplus revenue generated from water rates is applied to a "working capital" account which funds water system improvement projects. The tiered increase in Calistoga's water rates over the next several years is a fair and equitable approach to passing increases in cost to the customer while maintaining the solvency of its water system operations.
2. Comparatively, the City of Calistoga's water rates are the highest among the five cities in Napa County. Calistoga should continue its efforts to educate its constituents with respect to the relationship between operational cost, infrastructure constraints, and water rates.

Opportunities for Shared Facilities:

1. As a subcontractor to Napa County Flood Control and Water Conservation District, the City of Calistoga is responsible for assuming its proportional costs for the delivery of water drawn from the State Water Project. Subcontractors are also responsible for paying a transportation charge that covers the cost associated with the infrastructure and facilities needed to capture and convey water to Napa County. These shared facilities include the North Bay Aqueduct and the Napa Turnout Reservoir. Costs relating to future upgrades and improvements to this conveyance system will be shared among each subcontractor as well as the Solano County Water Agency and its subcontractors.

Improvements to the North Bay Aqueduct are needed to increase its available capacity to equal the amount of entitlements contracted by the Napa County Flood Control and Water Conservation District (NCFCWD). NCFCWD is currently working with the Solano County Water Agency to implement improvements to the North Bay Aqueduct to meet both agencies contracted entitlement amount. A key factor to this planned improvement is the

completion of the original design of the North Bay Aqueduct and to satisfy the increase in State Water Project entitlements generated from NCFCWCD's agreement with the Kern County Water Agency.

2. The City of Calistoga currently shares costs with the City of Napa to treat and deliver its allotment of water entitlements drawn from the State Water Project. This relationship provides the mechanism for both agencies to share cost with respect to future system improvements affecting each agency's water distribution systems.
3. The City of Calistoga may have an opportunity to share costs and facilities with the City of St. Helena relating to its need to improve the conveyance system that connects its distribution system to the City of Napa. St. Helena recently purchased 1,000 acre-feet in SWP entitlements as part of Napa County Flood Control and Water Conservation District's water transfer agreement with Kern County Water Agency. However, St. Helena does not have the infrastructure needed to convey this entitlement to its distribution system. Accordingly, these two Upper-Valley cities may benefit from a collaborative project that increases delivery capacity of Calistoga's conveyance system while providing St. Helena access to its SWP entitlements.

Government Structure Options:

1. The City of Calistoga is the only public agency providing water service within its jurisdictional boundary. There are two other public agencies empowered to provide water service whose jurisdictions overlap that of Calistoga: the Napa County Flood Control and Water Conservation District and Napa County Resource Conservation District. Both of these agencies have elected not to offer water service, and have expressed no intentions of doing so in the foreseeable future.
2. There has not been a change in the City of Calistoga's organization since 1984 and its sphere of influence remains conterminous with its jurisdictional boundary.

Evaluation of Management Efficiencies:

1. Each year, the City of Calistoga provides a summary of past and projected revenues and expenditures stemming from its water service operations as part of its annual budget. The budget is adopted following public hearings in which members of the public are allowed to comment and offer suggestions with respect to expenditures relating to water service. In addition to enhancing the accountability of elected and appointed officials, the budget process provides a clear directive towards staff with respect to prioritizing city resources.

2. In 2000, the City of Calistoga prepared its first comprehensive water facilities plan. The plan recommended approximately 13 million dollars in capital improvement projects to address existing and future water system requirements through 2005. The capital improvement program was adopted by Calistoga's City Council and demonstrates a reasonable effort on behalf of management to address and update water quality and service objectives in a timely and efficient manner.
3. The City of Calistoga regulates the issuance of water connections in accordance with procedures specified in its Resource Management System. This system requires Calistoga's Public Works Department to provide the City's Planning and Building Department on a quarterly basis with a written report identifying current water use by customer class as well as the amount of available water. Planning and Building uses this information in determining whether to approve a new water connection with the caveat that the allocation of new connections remains 60/40 in favor of residential projects. This system facilitates communication between different branches of city services and works to ensure that the extension of water service to new development will not adversely affect the service conditions of existing customers.
4. Through its recently adopted water rate increase that will continue to increase rates each year through 2006, the City of Calistoga is developing adequate capital reserves to finance necessary upgrades and improvements to its water system.

Local Accountability and Governance:

1. The City of Calistoga City Council meetings are conducted twice a month and are open to the public. Public inquiries involving water service operations can be addressed to the Council at this time. Regularly scheduled council meetings provide an opportunity for Calistoga's constituents to ask questions of their elected representatives, while helping to ensure that service information is being effectively communicated to the public.
2. The City of Calistoga makes reasonable efforts to maintain public dialogue with its constituents regarding its water service operations. These efforts facilitate local accountability and contribute towards public involvement in local governance.

These efforts include publishing a quarterly newsletter that typically includes information relating to its water service operations, including personnel news, capital improvement projects, studies, and water rates. Calistoga also provides news inserts with billing statements and utilizes its website to provide visitors with current information involving water service, including conservation opportunities. Customers can visit or call Calistoga's water division during regular business hours to discuss questions involving their water bill or service conditions. Designated public works employees are also on call 24 hours a day to respond to water service related emergencies.

3. The City of Calistoga currently provides water service to approximately 72 connections outside its jurisdictional boundary. Although Calistoga no longer approves new connections or expansions of existing water connections for outside users, the City should continue to include the service demands of these users in their water supply analysis.
4. The City of Calistoga is the only municipality in Napa County with an ordinance regulating the issuance of cold-water wells within its jurisdictional boundary. This demonstrates a concerted effort by Calistoga to implement proactive measures for the preservation and health of Napa County's groundwater basins.
5. The City of Calistoga's administration and water service operations are maintained and managed by a responsive and professional staff. These characteristics enhance accountability and cultivate desirable working relationships with members of the public as well as other agencies.